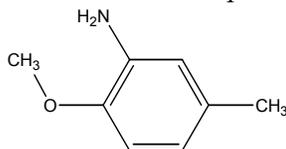


***p*-CRESIDINE**
CAS No. 120-71-8

First Listed in the *Second Annual Report on Carcinogens*



CARCINOGENICITY

p-Cresidine is *reasonably anticipated to be a human carcinogen* based on sufficient evidence of carcinogenicity in experimental animals (NCI 1979, IARC 1982, 1987). When administered in the diet, *p*-cresidine increased the incidences of squamous cell and transitional cell carcinomas of the urinary bladder and olfactory neuroblastomas in rats of both sexes, and neoplastic liver nodules in male rats. When administered in the diet, *p*-cresidine increased the incidences of carcinomas of the urinary bladder in mice of both sexes and hepatocellular carcinomas in female mice.

No adequate human studies of the relationship between exposure to *p*-cresidine and human cancer have been reported (IARC 1987).

PROPERTIES

p-Cresidine occurs as odorless, white to silver-grey crystals and is soluble in water and organic solvents. It is sensitive to moisture and temperatures >40°C and is incompatible with strong oxidizing agents. *p*-Cresidine is nonflammable (HSDB 2001, NTP 2001).

USE

p-Cresidine is used exclusively as a synthetic chemical intermediate to produce azo dyes and pigments, such as Direct Orange 72, FD&C Red 40, and Direct Violet 9. These dyes are produced commercially in the United States and are used in the textile industry (IARC 1982, NCI 1979).

PRODUCTION

p-Cresidine has been produced in the United States since 1926 (IARC 1982). The 1997 Directory of Chemical Producers named one producer of the compound, but the quantity produced was considered to be proprietary (SRI 1997). Approximately one million lb were produced in the U.S. in 1977 (HSDB 2001). *p*-Cresidine was included in the 1990 list of high production volume (HPV) chemicals, but it was not included in the 1994 list. HPV chemicals are those that are manufactured in or imported into the U.S. in amounts greater than or equal to one million lb (EPA 2001). Eight current U.S. suppliers were identified (Chem Sources 2001). No recent import or export data were found. According to HSDB (2001), approximately 89,000 and 590,000 lb were imported in 1977 and 1979, respectively.

EXPOSURE

The primary routes of potential human exposure to *p*-cresidine are inhalation and dermal contact. Potential occupational exposure is believed to be limited to workers in dye-production facilities. Residual levels or trace impurities of *p*-cresidine may be present in some dyes and subsequently present in the final consumer product. However, no data were available on the actual levels of impurities in the final product or the potential for consumer exposure and uptake. The Toxic Chemical Release Inventory (TRI) reported that three companies released a combined total of 2,140 lb of *p*-cresidine to the environment in 2001, of which 81% was released to the air. The TRI data show that annual industrial releases of *p*-cresidine have declined more than five fold since 1988 and 1989 when 12,780 lb and 10,010 lb, respectively, were released (TRI99 2001).

REGULATIONS

EPA regulates *p*-cresidine as a toxic chemical under the Superfund Amendments and Reauthorization Act (SARA) and subjects it to general threshold limits. EPA has proposed establishing reporting and record-keeping requirements under the Resource Conservation and Recovery Act (RCRA) and the Toxic Substances Control Act (TSCA).

FDA does not currently regulate *p*-cresidine under the Food, Drug, and Cosmetic Act (FD&CA). However, the chemical is a potential contaminant in Red 40 (Alluna Red) and regulatory action is pending.

OSHA regulates *p*-cresidine under the Hazard Communication Standard and as a chemical hazard in laboratories. Regulations are summarized in Volume II, Table 50.

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